



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

In reply refer to:
OPNAVINST 4790.4D
N431H
23 January 2004

OPNAV INSTRUCTION 4790.4D

From: Chief of Naval Operations

Subj: SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) SYSTEM
POLICY

Ref: (a) OPNAVINST 4700.7J, Maintenance Policy for U.S. Navy
Ships
(b) SECNAVINST 4790.1, Department of the Navy
Maintenance and Material Management (3-M) System;
Policy for
(c) NAVSEAINST 4790.8B Ships' Maintenance
and Material Management (3-M) Manual
(d) MIL-P-24534A, Planned Maintenance System:
Development of Maintenance Requirement Cards,
Maintenance Index Pages, and Associated Documentation
(e) OPNAVINST 4790.16, Condition-Based Maintenance (CBM)
Policy

1. Purpose To establish policy and assign responsibilities for the Ships' 3-M System in accordance with references (a) and (b). This instruction is a complete revision and should be reviewed in its entirety.

2. Cancellation OPNAVINST 4790.4C.

3. Background The previous Ships' 3-M System Manual, OPNAVINST 4790.4C, included both policy and implementation instructions. This document only provides the current Navy policy. Reference (c) provides implementation guidance for ships' maintenance and material management.

4. Scope

a. The Ships' 3-M System applies to all ships, service craft, small boats, and non-aviation Fleet test and support

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equipment. This includes, but is not limited to, Navy Meteorological Equipment, equipment of the Naval Air Traffic Control, Air Navigation and Landing Systems, Aircraft Launch and Recovery Equipment, Commander Naval Reserve Force, and Naval Education Training Command activities.

b. Common support equipment used by both ship's force and Naval aviation units shall have Planned Maintenance System (PMS) support provided under reference (c). Scheduling of this maintenance by naval aviation units may be done under the Naval Aviation Maintenance Program to avoid duplicative and redundant schedules.

c. The Ships' 3-M System does not apply to nuclear propulsion plants and associated test equipment under the cognizance of Commander, Naval Sea Systems Command (COMNAVSEASYS COM) (SEA 08), fleet ballistic missile systems, or aeronautical support equipment covered in the Naval Aviation Maintenance Program. Also excluded are civilian operated and maintained ships, small boats, and service craft, unless specifically included as a requirement in a Base Operating Contract (BOC) or other similar document. Civilian contracts may include 3-M support if applicable.

d. All reference (a) activities providing maintenance to ships and other applicable activities shall report their efforts to the Maintenance Data System (MDS) as described in references (a) and (c).

e. Shore activity level of participation in the Ships' 3-M System shall be at the request of the shore activity's senior command and will be provided on a cost reimbursable basis. Equipment used ashore which is identical to shipboard installed equipment will be maintained using existing 3-M coverage.

5. Discussion

a. The Ships' 3-M System is the nucleus for managing maintenance aboard all ships and applicable shore station equipment. This system provides all maintenance and material managers throughout the Navy with a process for planning, acquiring, organizing, directing, controlling and evaluating the manpower and material resources used to support maintenance. As a management tool, the Ships' 3-M System provides efficient and uniform methods of conducting and recording preventive, alterative and corrective maintenance as well as allowing easy access to the collected data.

b. The Ships' 3-M System is designed to provide for managing maintenance and maintenance support to achieve maximum equipment operational readiness. The Ships' 3-M System shall provide for:

(1) Standardization - achieve uniform maintenance standards and criteria.

(2) Efficiency - effective use of available manpower and material resources in maintenance and maintenance support efforts.

(3) Documentation - recording maintenance and maintenance support actions to establish a reliable material history.

(4) Analysis - used to improve reliability and maintainability of systems and equipment, and to reduce cost of material ownership.

(5) Configuration Status Accounting - reporting and recording changes to installed equipment, equipment configuration specifications, and shipboard location.

(6) Scheduling - standardized method for planning, managing, executing and tracking maintenance requirements and accomplishments. This includes component requirements from the Class Maintenance Plans (CMP) and the Integrated Class Maintenance Plan (ICMP).

6. Policy

a. The Ships' 3-M System is a management tool that provides efficient and uniform methods for conducting and recording preventive, alterative and corrective maintenance. Preventive maintenance actions are those actions intended to prevent or discover functional failures. Preventive maintenance includes actions taken to prevent equipment from failing, such as changing the oil, cleaning filters, calibrating, etc. Alterative maintenance is the performance of authorized changes or modifications to upgrade or change the design of installed equipment. Corrective maintenance, are actions taken to fix equipment that has failed or is not working to desired performance standards. Planned Maintenance System (PMS) and Maintenance Data System (MDS) tools are provided to manage ship maintenance.

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b. PMS is a standardized method of planning, scheduling, and accomplishing preventive maintenance by ship's force. PMS maintenance procedures will be developed in accordance with Reliability-Centered Maintenance concepts as specified in references (d) and (e), based on sound engineering practice, technical standards, and practical experience. These procedures will be developed by the activities of the Systems Commands (SYSCOMs) responsible for the development and procurement of the systems/equipment for active, new construction, major conversion and activation of ships, boats, and crafts. The procedures are to be the minimum required to maintain equipment in an operable condition within specifications. PMS supersedes all organizational level planned or preventive maintenance systems or programs. Where a difference between the requirements and/or procedures of PMS and other technical publications or systems exists, PMS requirements will prevail. Differences shall be reported using PMS feedback reporting procedures.

c. To reduce PMS requirements while in extended maintenance periods and other times when equipment is not operated, an Inactive Equipment Maintenance (IEM) system will provide modified PMS procedures for the maintenance of systems and equipment.

d. MDS is the means which maintenance personnel can report applicable maintenance requirements and configuration changes on all categories of equipment. MDS will be set up so that maintenance personnel will record maintenance data only once.

e. Equipment Configuration Status Accounting.

(1) Configuration status accounting, or the ability to accurately document, track, and maintain the configuration of a ship's systems is a critical factor in maintaining proper shipboard logistics support. NAVSEASYSKOM maintains a central database with the ships' configuration data.

(2) For each ship class, a single activity called a Configuration Data Manager (CDM), has been designated the control authority for accuracy and completeness of the configuration information. Prior to ship delivery, the SYSCOM and the delivering activity are responsible for the initial accuracy and completeness of the central database. After delivery, it is imperative that the ship maintains and updates its configuration data in the Ship's Equipment File (SEF), through the submission of configuration change reports.

(3) An item is considered to be a Configuration Worthy Item (CWI) if one or more of the following criteria are met:

- (a) Any item that is bought from an outside activity,
- (b) Any item, including software that has a separate specification,
- (c) Any item that has a separate drawing,
- (d) Any item that is a separate line item or sub line item on a purchase order or contract,
- (e) Any item that has or requires any form of separate technical or logistics document (e.g., supply support, test equipment requirement, calibration standard requirement, technical manuals and/or repair standards, PMS, etc.), Maintenance Assist Modules (MAMs), intermediate and/or depot level maintenance plans or drawings, installation or configuration control drawings and/or selected records, or
- (f) Any item needed to support software tracking.

This means that nearly every part of a ship or system is configuration worthy if it supports the Navy's need to treat the item as a separate configuration item; nothing is too small or too large. Examples of Configuration Worthy Items are systems, subsystems, equipment, subassemblies, piping segments between valves, electrical cables between junction boxes, stuffing tubes/boxes, ventilation ducts between inlets/blowers/outlets, tanks, voids, compartments, masts, booms, padeyes, lifelines, ladders, foundations, sea chests/suctions, underwater hull areas, sacrificial anodes, bunks, lockers, furniture, machine shop tools/attachments/accessories, anything with a separate serial number and anything with life limit or containing life limited components.

Alteration installation activities are required to provide configuration change data to the ship's 3M manager upon completion of equipment installation. Configuration changes made by the ship are reported through the Ships' 3-M System. For ships with Maintenance Support Centers (MSCs), the MSC will research and approve all configuration change requests.

7. Responsibilities

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a. Overall. Commands of the operating forces are responsible for the proper implementation of the Ships' 3-M System in the Fleet, and are responsible for informing the chain of command of conditions affecting material readiness.

b. Chief of Naval Operations (CNO) (N43)

(1) Sponsor the Ships' 3-M System.

(2) Develop and implement the overall policy governing management of the Ships' 3-M System, its development, coordination, and maintenance.

(3) Review the total personnel and monetary resources requested for the operation, improvement, and support of the 3-M System by all levels of management afloat and ashore; and supporting requirements in the budget effort. The program requirements will be submitted by Commander, Fleet Forces Command (CFFC) to OPNAV N43 for review and validation.

(4) Approve management applications of the MDS and PMS.

c. Commander Fleet Forces Command (CFFC)

(1) Implement, manage, coordinate and maintain the Ship's 3-M system program for all ships and commands under its cognizance.

(2) Review the personnel and monetary resources required for the operation, improvement, and support of the 3-M System by all levels of management afloat and ashore; and supporting requirements in the budget effort. Submit the program requirements to CNO (N43) for review and validation.

(3) Ensure personnel assigned to the 3-M staff have the necessary skills to administer the program.

(4) Advise and assist NAVSEASYS COM in the execution of Ships' 3-M System responsibilities as required.

(5) Provide a single point of contact for Atlantic and Pacific Fleets for all 3-M issues to include: policy, training, assessment criteria and procedures.

(6) Obtain CNO (N43) approval before implementing management applications that require CNO-funded computer program

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modification. This does not preclude development of additional applications to resolve management problems providing such development does not require changes to the existing Ships' 3-M System.

(7) Task Fleet Commanders to provide sufficient time for ships to conduct 3-M functions. Operational orders, letters of instructions, and other operational directives will recognize and provide for the accomplishment of 3-M requirements.

d. Fleet Commanders (FLTCs)

(1) Exercise overall responsibility for Ships' 3-M System operation.

(2) Ensure quality, completeness, and timely submission of data collected within their respective fleets.

(3) Ensure personnel assigned to the 3-M staff have the necessary skills to administer the program.

(4) Ensure the scope of Ships' 3-M System training at fleet schools reflects the required quantity and quality of 3-M training.

(5) Provide fleet maintenance and management personnel with the necessary skills to successfully support the Ships' 3-M System.

(6) Advise and assist NAVSEASYS COM in the execution of Ships' 3-M System responsibilities as required.

(7) Coordinate and control fleet Automated Data Processing (ADP) facilities necessary to process 3-M System information.

(8) Obtain CNO (N43) approval before implementing management applications which require CNO-funded computer program modification. This does not preclude development of additional applications to resolve management problems providing such development does not require changes to the existing Ships' 3-M System.

(9) Maintain an adequate 3-M staff to administer the Ships' 3-M System.

(10) Jointly (COMLANTFLT and COMPACFLT) develop

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quantitative assessment criteria, guidelines, and procedures.

(11) Task Operational Commanders to provide sufficient time for ships to conduct 3-M functions. Operational orders, letters of instructions, and other operational directives will recognize and provide for the accomplishment of 3-M requirements.

e. Type Commanders (TYCOMS)

(1) Exercise primary responsibility for the effective operation and support of the Ships' 3-M System under their claimancy. This responsibility includes shore activities under their cognizance where the Ships' 3-M System is applicable. The Commanding Officer of Naval Bases, Naval Stations, and other activities that do not report directly to a TYCOM, shall exercise TYCOM 3-M System responsibilities.

(2) Ensure personnel assigned to the 3-M staff have the necessary skills to administer the program.

(3) Provide qualified teams to conduct Ships' 3-M System training assists and installations.

(4) Conduct review of submitted 3-M data (MDS documents, etc.). Ensure prompt submission and accurate processing of 3-M data.

(5) Provide adequate Ships' 3-M System training to maintenance and maintenance management personnel.

(6) Monitor and participate in the development of 3-M management tools.

(7) Conduct appropriate review of Casualty Reports (CASREPS), Safety Advisory and Mishap Reports, and Material Inspection Reports.

(8) Certify the functional adequacy of the installed Ships' 3-M Systems.

(9) Promote the use of the Internet to access and use 3-M products and tools.

f. Naval Sea Systems Command (COMNAVSEASYS COM)

(1) Manage and direct the development, implementation,

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operational maintenance, and improvements of all aspects of the Ships' 3-M System throughout the Navy, both PMS and MDS.

(2) Provide instruction and technical direction for the management of the Ships' 3-M System consistent with policy established by CNO and the requirements of the Fleet Commanders and TYCOMs.

(3) Provide technical direction of the Ships' 3-M System functional efforts at the Naval Sea Logistics Center (NAVSEALOGCEN).

(4) Manage and approve development of Selected Level Reporting (SLR) and Equipment Identification Codes (EICs).

(5) Direct and control revisions of the Ships' 3-M System.

(6) Develop and maintain Ships' 3-M System manuals and other maintenance and material reporting documents.

(7) Direct and maintain detailed documentation policy and procedures for reporting configuration changes to equipment ashore and afloat through the Ships' 3-M System.

(8) Develop and maintain a system to track from submission to completion PMS Feedback Reports (FBR) submitted by fleet personnel.

(9) Develop PMS procedures for specific equipment using Reliability-Centered Maintenance (RCM) procedures and standard formats for all afloat equipment and identical equipment used ashore in accordance with reference (d).

(10) Coordinate PMS matters and provide PMS support for ships and shore activities having identical equipment used aboard ship. PMS support for non U.S. Navy ship type equipment such as documentation development, revision, printing, loading, and maintaining, etc., shall be provided by NAVSEASYSOM on a reimbursable basis.

(11) Institute a process to continually improve PMS documentation for effectiveness, applicability and affordability using RCM principles in accordance with references (d) and (e).

(12) Develop and coordinate all organizational, intermediate, and depot level Ships' 3-M System functional

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matters.

(13) Direct parts usage reporting under the Ships' 3-M System.

(14) Coordinate the development of the Ships' 3-M System training for systems command managers.

(15) Oversee the interface of the Ships' 3-M System with other applicable ADP systems.

(16) Monitor, evaluate, and improve the completeness, accuracy, and usefulness of the Ships' 3-M System reporting throughout the Navy.

(17) Identify resource requirements for the Ships' 3-M System matters for inclusion in the Program Objective Memorandum (POM) guidance, budget submissions, and other resource documents.

(18) Provide policy, instruction, and technical direction for shipboard Technical Manual Management.

(19) Provide reliability, maintainability, and availability (RM&A) analysis of systems and equipment to determine operational readiness characteristics.

(20) Create and maintain a central database with each ship's configuration data.

g. Regional Maintenance Centers (RMCs). The Mid Atlantic Regional Maintenance Center (MARMC) and the South West Regional Maintenance Center (SWRMC) are field activities of the FLTCs. Each provides a logistic support group that supports 3-M. The MARMC and SWRMC 3-M responsibilities are:

(1) Provide PMS products for all PMS installations, new construction and major conversion ships.

(2) Provide TYCOMs with PMS reference information.

(3) Provide schools and material support commands and activities with documentation necessary to establish and maintain PMS.

(4) Provide documentation to users, who are not holders of equipment, on a reimbursable basis.

(5) Process non-Technical Feedback Reports and conduct technical review and resolve Technical Feedback Reports (TFBRs). Unresolved TFBRs will be transmitted to the cognizant technical authority.

(6) Maintain liaison with TYCOMs and assist with shipboard PMS installations and equipment verifications as requested by them.

(7) Develop and revise PMS documentation as directed and funded by SYSCOMS, Bureau of Medicine and Surgery (BUMED), and/or In-Service Engineering Agents (ISEAs).

(8) Standardize, maintain accountability and distribute changes of all PMS documentation.

(9) Review and evaluate existing PMS maintenance requirements as requested.

(10) Assist in PMS verification and installation in new construction/major conversion ships as directed. Function as PMS coordinating activity responsible for coordinating review and approval of PMS development documentation to ensure compliance with this instruction and reference (d).

(11) Provide guidance to PMS developers to ensure compliance with this instruction and references (c) through (e).

h. SYSCOMS/BUMED

(1) Ensure appropriate PMS packages are delivered simultaneously with equipment. Ensure that PMS packages are delivered to the RMCs for inclusion in the master data file.

(2) Ensure that MDS data is used to measure equipment reliability, maintainability, and operational availability in the fleet; in order to identify deficiencies correctable by SYSCOMS, BUMED or other activities, and to monitor the effectiveness of corrective actions taken.

(3) Supervise efforts of field activities involved in providing, processing, and/or using 3-M System information.

(4) Take action on PMS Feedback Reports (FBR) submitted by fleet personnel.

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(5) Review existing PMS documentation to ensure technical validity and prompt accomplishment of required changes.

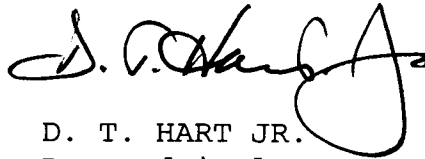
i. Naval Education Training Command (NETC)

(1) Ensure that training efforts in support of the Ships' 3-M System support the requirements of the FLTCs, and that necessary follow-on training is provided to fleet personnel.

(2) Initiate periodic reviews of the Ships' 3-M System training curricula to ensure compliance with current directives.

(3) Ensure schools report configuration changes on any of their shipboard identical equipment that has been changed, modified, or deleted; and submit file corrections when applicable.

(4) Maintain shipboard applicable training equipment in accordance with reference (c).



D. T. HART JR.
Rear Admiral
Director, Fleet Readiness Division

Distribution:

SNDL A1F (ASSTSECNAV FMC)
A1J (ASSTSECNAV RDA)
A1J1L (PEO Integrated Warfare Systems)
A1J1M (PEO Littoral and Mine Warfare)
A1J1N (PEO SUB)
A1J1P (PEO SHIPS)
A1J1Q (PEO CARRIERS)
A5 (Chief of Naval Personnel)
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20A (Fleet Force Command)
21A (Fleet Commanders)
22A (Fleet commanders)
23 (Force Commanders)
24 (Type commanders) (less 24J)
25 (Mine Warfare) (less 25B)
26A (Amphibious Group)
26B3 (Surface Force Reserve Commander)
26E (Amphibious Unit)
26F (Operational Test and Evaluation Force and Detachment)
26J (Afloat Training Group and Detachment)
26L (Priority Material Office and Detachment)
26R (Mobile Inshore Undersea Warfare Unit and Group)
26T (Regional Support Group and Organization)
26U (Regional Maintenance Center)
26Z (Shore Intermediate Maintenance Activity and Detachment/Naval Reserve Maintenance Facility)
26BB (Fleet CSOSS Development and Implementation Team)
26MM (Fleet Integrated Logistics Overhaul Activity and Team)
26VV (Submarine Force Shipyard Representative)
28 (Squadron, Division and Group Commanders - Ships)
29 (Warships)
30 (Mine Warfare Ships)
31 (Amphibious Warfare Ships)
32 (Auxiliary Ships)
36 (Service Craft)
39 (Construction Battalions, Brigades, Regiments and Detachments)
41A (Commander Military Sealift Command)
41B (Area commanders, MSC)
C28D (Fleet Technical Support Center Atlantic Detachment)
C31B (Fleet Technical Support Center Pacific Detachment)
C31F (Maintenance Detachment)
C31G (Ship Repair Facility Detachment, Pacific)
C81B (Space and Naval Warfare Systems Center Detachment)

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C84 (Shore Based Detachments, SEASYS COM) (Less C84J)
 FA10 (Submarine Base LANT)
 FA13 (Submarine Support Facility LANT)
 FA50 (Trident Refit Facility, LANT)
 FA8 (Fleet Technical Support Center, LANT)
 FB13 (Submarine Base PAC)
 FB29 (Intermediate Maintenance Facility, PAC)
 FB8 (Fleet Technical Support Center, PAC)
 FB30 (Ship Repair Facility)
 FC5 (Support Activity NAVEUR)
 FF5 (Naval Safety Center)
 FF8 (Inspection and Survey Board)
 FF42 (SCOL Postgraduate)
 FI1 (Naval Special Warfare Center)
 FKA1A (Air Systems Command)
 FKA1B (Space and Naval Warfare Systems Command and
 Activities)
 FKA1F (Supply Systems Command)
 FKA1G (Sea Systems Command)
 FKA8F (Strategic Systems Program Office) (FKA8F Only)
 FKM9 (Fleet and Industrial Supply Center)
 FKM14 (Naval Inventory Control Point) (Mechanicsburg Only)
 FKM17 (Supply Information Systems Activities)
 FKP (Naval Sea Systems Command Field Activities) (Less
 FKP24, FKP6B)
 FS1 (Intelligence Command Headquarters (Code 21))
 FT1 (Naval Education Training Command)
 FT22 (Fleet Training Center)
 FT28 (Naval Education Training Command)
 FT30 (Service School Command)
 FT31 (Naval Training Center)
 FT43 (Surface Warfare Officers School Command)
 FT88 (Engineering Duty Officer School)

 OPNAV (N00, N095, N40, N41, N42, N43, N8, N75,
 N76, N765, N766, N77, N771, N78, and N785)